

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously presented) A method of activating helper T cells, said method comprising administering a T cell activating effective amount of GPI or a complex comprising GPI which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with CD1, which association activates helper T cells, wherein said GPI molecule comprises  $\text{Ma}2\text{Ma}6\text{Ma}4\text{Ga}6\text{Ino}-\text{Y}$ , wherein M is mannose, G is non-Nacetylated glucosamine, Ino is inositol or inositol-phosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent positional linkages, and Y is a lipid or phospholipid.
2. (Original) The method according to claim 1 wherein said helper T cell is  $\text{CD4}^+$  T cell.
3. (Previously presented) The method according to claim 2 wherein said  $\text{CD4}^+$  T cell is a  $\text{CD4}^+$   $\text{NK1.1}^+$  T cell.
4. (Withdrawn) The method according to claim 1 wherein said complex comprises GPI and malarial CS protein or derivative or equivalent thereof.
5. (Withdrawn) The method according to claim 1 wherein said complex comprises GPI and MSP-1 or derivative or equivalent thereof.
6. (Withdrawn) The method according to claim 1 wherein said complex comprises GPI and MSP-2 or derivative or equivalent thereof.
7. (Withdrawn) The method according to claim 1 wherein said complex comprises GPI and *Leishmanial* PSA-2 or derivative or equivalent thereof.

8. (Withdrawn) The method according to claim 1 wherein said complex comprises GPI and GP63 or derivative or equivalent thereof.
9. (Previously presented) The method according to claim 1 wherein said GPI is a *Plasmodium* GPI.
10. (Original) The method according to claim 9 wherein said *Plasmodium* is *P. falciparum*.
11. (Currently amended) The method according to claim 1 wherein said GPI comprises a structure selected from:
- EtN-P-[Ma<sub>2</sub>]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 EtN-P-[Ma<sub>2</sub>][G]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 EtN-P-[Ma<sub>2</sub>][X]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 EtN-P-[Ma<sub>2</sub>][EtN-P]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 Ma<sub>2</sub>[Ma<sub>2</sub>]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 Ma<sub>2</sub>[Ma<sub>2</sub>][G]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 Ma<sub>2</sub>[Ma<sub>2</sub>][X]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y  
 or derivatives or equivalents thereof wherein EtN is ethanolamine, P is phosphate, M is mannose, G is non-N-acetylated glucosamine, [G] is any non-N-acetylated hexosamine including glucosamine, or any other nitrous-acid labile substituent, Ino is inositol or inositol-phosphoglycerol, [X] is any other substituent, α represents α-linkages which may be substituted with β-linkages wherever required, numeric values represent positional linkages which may be substituted with any other positional linkages as required, and Y is any lipid or phospholipid.
12. (Original) The method according to claim 11 wherein said lipid is diacylglycerol, alkalacylglycerol, monoalkylglycerol, ceramide or sphingolipid.
13. (Original) The method according to claim 11 wherein said phospholipid is

phosphatidylethanolamine, phosphatidylcholine or phosphatidylserine.

14. (Previously presented) A method of activating helper T, cells said method comprising administering a T cell activating effective amount of GPI or a complex comprising GPI which GPI or GPI complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells wherein said activated T cells provide B cell help, wherein said GPI molecule comprises  $\text{Ma}_2\text{Ma}_6\text{Ma}_4\text{Ga}_6\text{Ino-Y}$ , wherein M is mannose, G is non-N-acetylated glucosamine, Ino is inositol or inositol-phosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent positional linkages, and Y is a lipid or phospholipid.

15. (Original) The method according to claim 14 wherein said helper T cell is a  $\text{CD4}^+$  T cell.

16. (Original) The method according to claim 15 wherein said  $\text{CD4}^+$  T cell is a  $\text{CD4}^+$   $\text{NK1.1}^+$  T cell.

17. (Withdrawn) A method of activating helper T cells said method comprising administering a T cell activating effective amount of GPI or derivative or equivalent thereof or a complex comprising GPI or derivative or equivalent thereof which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells wherein said activated T cells induce or otherwise upregulate a TH1 type response.

18. (Previously presented) A method of activating helper T cells, said method comprising administering a T cell activating effective amount of GPI or a complex comprising GPI which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells wherein said activated T cells induce or otherwise upregulate a TH2 type response, wherein said GPI molecule comprises  $\text{Ma}_2\text{Ma}_6\text{Ma}_4\text{Ga}_6\text{Ino-Y}$ , wherein M is mannose, G is non-N-acetylated glucosamine, Ino is inositol or inositol-phosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent

positional linkages, and Y is a lipid or phospholipid.

19-78. (Cancelled)

79. (Withdrawn) The method according to claim 17 wherein said helper T cell is a CD4<sup>+</sup> T cell.

80. (Withdrawn) The method according to claim 79 wherein said CD4<sup>+</sup> T cell is a CD4<sup>+</sup>, NK1.1 T cell.

81. (Previously presented) A method of inducing, in a mammal, an immune response directed to GPI, said method comprising administering to said mammal a T cell activating effective amount of GPI which GPI is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells, wherein said GPI molecule comprises Ma2Ma6Ma4Ga6Ino-Y, wherein M is mannose, G is non-N-acetylated glucosamine, Ino is inositol or inositol-phosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent positional linkages, and Y is a lipid or phospholipid.

82. (Previously presented) The method according to claim 81 wherein said helper T cell is a CD4<sup>+</sup> cell.

83. (Previously presented) The method according to claim 82 wherein said CD4<sup>+</sup> T cell is a CD4<sup>+</sup>NK1.1<sup>+</sup> T cell.

84. (Previously presented) The method according to claim 81 wherein said GPI is *Plasmodium*.

85. (Previously presented) The method according to claim 84 wherein said *Plasmodium* is *P. falciparum*.

86. (Currently amended) The method according to claim 81 wherein said GPI comprises a structure selected from:

EtN-P-[Ma<sub>2</sub>]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

EtN-P-[Ma<sub>2</sub>][G]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

EtN-P-[Ma<sub>2</sub>][X]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

EtN-P-[Ma<sub>2</sub>][EtN-P]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>[Ma<sub>2</sub>]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>[Ma<sub>2</sub>][G]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>[Ma<sub>2</sub>][X]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

~~or derivatives or equivalents thereof~~ wherein EtN is ethanolamine, P is phosphate, M is mannose, G is non-N-acetylated glucosamine, [G] is any non-N-acetylated hexosamine including glucosamine, or any other nitrous-acid labile substituent, Ino is inositol or inositol-phosphoglycerol, [X] is any other substituent, α represents α-linkages which may be substituted with β-linkages wherever required, numeric values represent positional linkages which may be substituted with any other positional linkages as required, and Y is any lipid or phospholipid.

87. (Previously presented) The method according to claim 86 wherein said lipid is diacylglycerol, alkylacylglycerol, monoalkylglycerol, ceramide or sphingolipid.

88. (Previously presented) The method according to claim 86 wherein said phospholipid is phosphatidylethanolamine, phosphatidylcholine or phosphatidylserine.

89. (Withdrawn) A method of inducing, in a mammal, an immune response directed to an antigen, said method comprising administering to said mammal a helper T cell activating effective amount of GPI or derivative or equivalent thereof complexed to said antigen, which GPI-antigen complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells.

90. (Withdrawn) The method according to claim 89 wherein said helper T cell is a CD4<sup>+</sup> cell.

91. (Withdrawn) The method according to claim 90 wherein said CD4<sup>+</sup> T cell is a CD4<sup>+</sup> NK1.1<sup>+</sup> T cell.

92. (Withdrawn) The method according to claim 89 wherein said antigen is malarial CS protein or derivative or equivalent thereof.

93. (Withdrawn) The method according to claim 89 wherein said antigen is MSP-1 or derivative or equivalent thereof.

94. (Withdrawn) The method according to claim 89 wherein said antigen is MSP-2 or derivative or equivalent thereof.

95. (Withdrawn) The method according to claim 89 wherein said antigen is *Leishmanial* PSA-2 or derivative or equivalent thereof.

96. (Withdrawn) The method according to claim 89 wherein said antigen is GP63 or derivative or equivalent thereof.

97. (Withdrawn) The method according to claim 89 wherein said GPI comprises a structure selected from:

EtN-P-[Ma2]Ma2Ma6Ma4Ga6Ino-Y

EtN-P-[Ma2][G]Ma2Ma6Ma4Ga6Ino-Y

EtN-P-[Ma2][X]Ma2Ma6Ma4Ga6Ino-Y

EtN-P-[Ma2][EtN-P]Ma2Ma6Ma4Ga6Ino-Y

EtN-P-Ma2Ma6Ma4G-Y

Ma2Ma6Ma4G-Y

EtN-P-Ma2Ma6M-Y

EtN-P-[Ma2][G]Ma2Ma6Ma4G-Y

EtN-P-[Ma2][X]Ma2Ma6Ma4G-Y

EtN-P-[Ma2][EtN-P]Ma2Ma6Ma4G-Y  
 Ma2[Ma2][G]Ma2Ma6Ma4G-Y  
 Ma2[Ma2][X]Ma2Ma6Ma4G-Y  
 Ma2[Ma2][EtN-P]Ma6Ma4G-Y  
 Ma6Ma4Ga6Ino-Y  
 Ma2Ma6Ma4Ga6Ino-Y  
 Ma2[Ma2]Ma6Ma4Ga6Ino-Y  
 Ma2[Ma2][G]Ma6Ma4Ga6Ino-Y  
 Ma2[Ma2][X]Ma6Ma4Ga6Ino-Y  
 EtN-P-[Ma2][G]Ma2Ma6M-Y  
 EtN-P-[Ma2][X]Ma2Ma6M-Y  
 EtN-P-[Ma2][EtN-P]Ma2Ma6M-Y  
 Ma2[Ma2][G]Ma2Ma6M-Y  
 Ma2[Ma2][X]Ma2Ma6M-Y  
 Ma2[Ma2][EtN-P]Ma6M-Y  
 Ma2Ma6M-Y  
 Ma6Ma4G-Y  
 EtN-P-[Ma2][G]Ma2M-Y  
 EtN-P-[Ma2][X]Ma2M-Y  
 EtN-P-[Ma2][EtN-P]Ma2M-Y

or derivatives or equivalents thereof wherein EtN is ethanolamine, P is phosphate, M is mannose, G is non-N-acetylated glucosamine, [G] is any non-N-acetylated hexosamine including glucosamine, or any other nitrous-acid labile substituent, Ino is inositol or inositol-phosphoglycerol, [X] is any other substituent,  $\alpha$  represents  $\alpha$ -linkages which may be substituted with  $\beta$ -linkages wherever required, numeric values represent positional linkages which may be substituted with any other positional linkages as required, and Y is any lipid or phospholipid.

98. (Withdrawn) The method according to claim 97 wherein said lipid is diacylglycerol, alkylacylglycerol, monoalkylglycerol, ceramide or sphingolipid.

99. (Withdrawn) The method according to claim 97 wherein said phospholipid is phosphatidylethanolamine, phosphatidylcholine or phosphatidylserine.

100. (Previously presented) The method according to claim 81 wherein said activated helper T cell provides B cell help.

101. (Withdrawn) The method according to claim 81 wherein said activated T cells induce or otherwise upregulate a TH1 type response.

102. (Previously presented) The method according to claim 81 wherein said activated T cells induce or otherwise upregulate a TH2 type response.

103. (Previously presented) A method for the treatment and/or prophylaxis of a mammalian disease condition comprising administering to said mammal an effective amount of GPI or a complex comprising said GPI which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with the CD1 which association activates helper T cells, wherein said GPI molecule comprises  $\text{Ma2Ma6Ma4Ga6Ino-Y}$ , wherein M is mannose, G is non-N-acetylated glucosamine, Ino is inositol or inositolphosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent positional linkages, and Y is a lipid or phospholipid, thereby treating said condition or reducing the risk of developing said condition.

104. (Previously presented) The method according to claim 103 wherein said helper T cell is a  $\text{CD4}^+$  T cell.

105. (Previously presented) The method according to claim 104 wherein said  $\text{CD4}^+$  T cell is a  $\text{CD4}^+ \text{NK1.1}^+$  T cell.

106. (Previously presented) The method according to claim 103 wherein said activated T cell provides B cell help.



107. (Withdrawn) The method according to claim 103 wherein said activated T cells induce or otherwise upregulate a TH1 type response.

108. (Previously presented) The method according to claim 103 wherein said activated T cells induce or otherwise upregulate a TH2 type response.

109. (Previously presented) A method for the treatment and/or prophylaxis of a mammalian disease condition characterised by microorganism infection, said method comprising administering to said mammal an effective amount of GPI or a complex comprising said GPI which GPI or GPI complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells, wherein said GPI molecule comprises  $\text{Ma}_2\text{Ma}_6\text{Ma}_4\text{Ga}_6\text{Ino-Y}$ , wherein M is mannose, G is non-Nacetylated glucosamine, Ino is inositol or inositol-phosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent positional linkages, and Y is a lipid or phospholipid, thereby treating said condition or reducing the risk of developing said condition.

110. (Previously presented) The method according to claim 109 wherein said microorganism infection is a parasitic infection.

111. (Withdrawn) The method according to claim 110 wherein said complex comprises GPI and malarial CS protein or derivative or equivalent thereof.

112. (Withdrawn) The method according to claim 110 wherein said complex comprises GPI and MSP-1 or derivative or equivalent thereof.

113. (Withdrawn) The method according to claim 110 wherein said complex comprises GPI and MSP-2 or derivative or equivalent thereof.

114. (Withdrawn) The method according to claim 110 wherein said complex comprises *Leishmanial* PSA-2 or derivative or equivalent thereof.

115. (Withdrawn) The method according to claim 110 wherein said complex comprises GPI and GP63 or derivative or equivalent thereof.

116. (Currently amended) The method according to claim 109 wherein said GPI comprises a structure selected from:

EtN-P-[Ma<sub>2</sub>]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

EtN-P-[Ma<sub>2</sub>][G]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

EtN-P-[Ma<sub>2</sub>][X]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

EtN-P-[Ma<sub>2</sub>][EtN-P]Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>[Ma<sub>2</sub>]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>[Ma<sub>2</sub>][G]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

Ma<sub>2</sub>[Ma<sub>2</sub>][X]Ma<sub>6</sub>Ma<sub>4</sub>Ga<sub>6</sub>Ino-Y

~~or derivatives or equivalents thereof~~ wherein EtN is ethanolamine, P is phosphate, M is mannose, G is non-N-acetylated glucosamine, [G] is any non-N-acetylated hexosamine including glucosamine, or any other nitrous-acid labile substituent, Ino is inositol or inositol-phosphoglycerol, [X] is any other substituent,  $\alpha$  represents  $\alpha$ -linkages which may be substituted with  $\beta$ -linkages wherever required, numeric values represent positional linkages which may be substituted with any other positional linkages as required, and Y is any lipid or phospholipid.

117. (Previously presented) The method according to claim 116 wherein said lipid is diacylglycerol, alkylacylglycerol, monoalkylglycerol, ceramide or sphingolipid.

118. (Previously presented) The method according to claim 116 wherein said phospholipid is phosphatidylethanolamine, phosphatidylcholine or phosphatidylserine.

119. (Previously presented) The method according to claim 109 wherein said parasitic infection is a *Plasmodium* infection.

120. (Previously presented) The method according to claim 119 wherein said *Plasmodium* is *P. falciparum*.

121. (Withdrawn) The method according to claim 109 wherein said parasitic infection is a *Leishmania* infection.

122. (Withdrawn) A method for the treatment and/or prophylaxis of a mammalian disease condition characterized by the insufficiency or absence of an appropriate TH1 response said method comprising administering to said mammal an effective amount of GPI or derivative or equivalent thereof or a complex comprising said GPI or derivative or equivalent thereof which GPI or GPI complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association induces or otherwise upregulates a TH1 response.

123. (Withdrawn) The method according to claim 122 wherein said disease condition is Leishmaniasis, a neoplastic condition or cancer.

124. (Previously presented) A method for the treatment and/or prophylaxis of a mammalian disease condition characterised by the insufficiency or absence of an appropriate TH2 response said method comprising administering to said mammal an effective amount of GPI or a complex comprising said GPI which GPI or GPI complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association induces or otherwise upregulates a TH2 response, wherein said GPI molecule comprises  $\text{Ma}_2\text{Ma}_6\text{Ma}_4\text{Ga}_6\text{Ino-Y}$ , wherein M is mannose, G is non-N-acetylated glucosamine, Ino is inositol or inositol-phosphoglycerol,  $\alpha$  represents  $\alpha$ -linkages, numeric values represent positional linkages, and Y is a lipid or phospholipid, thereby treating said condition or reducing the risk of developing said condition.

125. (Previously presented) The method according to claim 124 wherein said disease condition is cerebral malaria, type I diabetes, autoimmune arthritis or systemic lupus erythromatosis.

126. (Withdrawn) Use of a composition comprising GPI or derivative or equivalent thereof or a complex comprising GPI or derivative or equivalent thereof in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of a mammalian disease condition wherein said GPI or GPI complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells.

127. (Withdrawn) Use according to claim 126 wherein said mammalian disease condition is a microorganism infection.

128. (Withdrawn) Use according to claim 127 wherein said microorganism is *Plasmodium*.

129. (Withdrawn) Use according to claim, 128 wherein said *Plasmodium* is *P. falciparum*.

130. (Withdrawn) Use according to claim 129 wherein said microorganism is *Leishmania*.

131. (Withdrawn) Use according to claim 130 wherein said disease condition is characterized by the insufficiency or absence of an appropriate TH1 response.

132. (Withdrawn) Use according to claim 131 wherein said disease condition is Leishmaniasis, a neoplastic condition or cancer.

133. (Withdrawn) Use according to claim 126 wherein said disease condition is characterized by the insufficiency or absence of an appropriate TH2 response.

134. (Withdrawn) Use according to claim 131 wherein said disease condition is cerebral malaria, type I diabetes, autoimmune arthritis or systemic lupus erythromatosis.

135. (Withdrawn) A composition capable of activating helper T cells, said composition comprising a GPI or derivative or equivalent thereof or a complex comprising GPI or derivative

or equivalent thereof which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with CD 1 which association activates helper T cells.

136. (Withdrawn) A vaccine composition comprising as the active component a GPI or derivative or equivalent thereof or a complex comprising GPI or derivative or equivalent thereof which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with CD1 which association activates helper T cells.

137. (Withdrawn) A pharmaceutical composition capable of activating helper T cells, said composition comprising a GPI or derivative or equivalent thereof or a complex comprising GPI or derivative or equivalent thereof which GPI or GPI-complex is capable of interacting with CD1 on an immune cell to form an association with CD1, which association activates helper T cells, together with one or more pharmaceutically acceptable carriers and/or diluents.